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Toxoplasmosis in Immunocompetent Military Veteran with Overseas Field Deployment

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Objective

- Educational awareness to symptomatic toxoplasmosis in military veterans with overseas field deployment.

Introduction

- Toxoplasmosis is caused by infection with the protozoan *Toxoplasma gondii*, an obligate intracellular parasite.
- T. gondii* infects a large portion of the world's population, possibly 1/3, but uncommonly causes clinically significant disease.
- Immunologically impaired, fetuses, and newborns are most susceptible.
- Seroepidemiologic surveys in the United States report 11 percent of persons aged 6 to 49 are seropositive for *T. gondii*.
- There are four means of acquiring toxoplasmosis in humans:
 - Ingestion of infectious oocysts from the environment
 - Ingestion of tissue cysts in meat or contaminated fruits/vegetables
 - Vertical transmission
 - Transmission through an organ transplantation from an infected donor
- Primary infection in immunocompetent persons is usually asymptomatic; however, in some, infection can present as an acute systemic infection. The infection typically develops 5 to 23 days after exposure to the organism.
- Serologic testing is the usual form of diagnosis in these patients.
- Constitutional symptoms such as fever, chills, and sweats are common.
- The most common clinical manifestation of acute toxoplasmosis is bilateral, symmetrical, nontender cervical adenopathy.

Case Report

- A 37-year-old male presented with persistent swollen bilateral non-tender occipital lymph nodes of two months duration.
- He also endorsed an acute fluid filled blister on the penis, recurrent cold sores, and significant fatigue but denied any fevers, chills, night sweats, weight loss and recent travel.
- All immunizations are up-to-date and received through the army.
- One of his colleagues in the army reported to be currently seeking medical attention for similar occipital lymphadenopathy. Both veterans ate uncooked meat often, usually goat.
- He has no known exposure to cats or cat feces.
- He is an active hunter and dresses his own kills; generally consisting of deer, rabbit, and duck.
- Urology referral found no abnormalities. HIV, gonorrhea, and chlamydia testing were negative..

Media

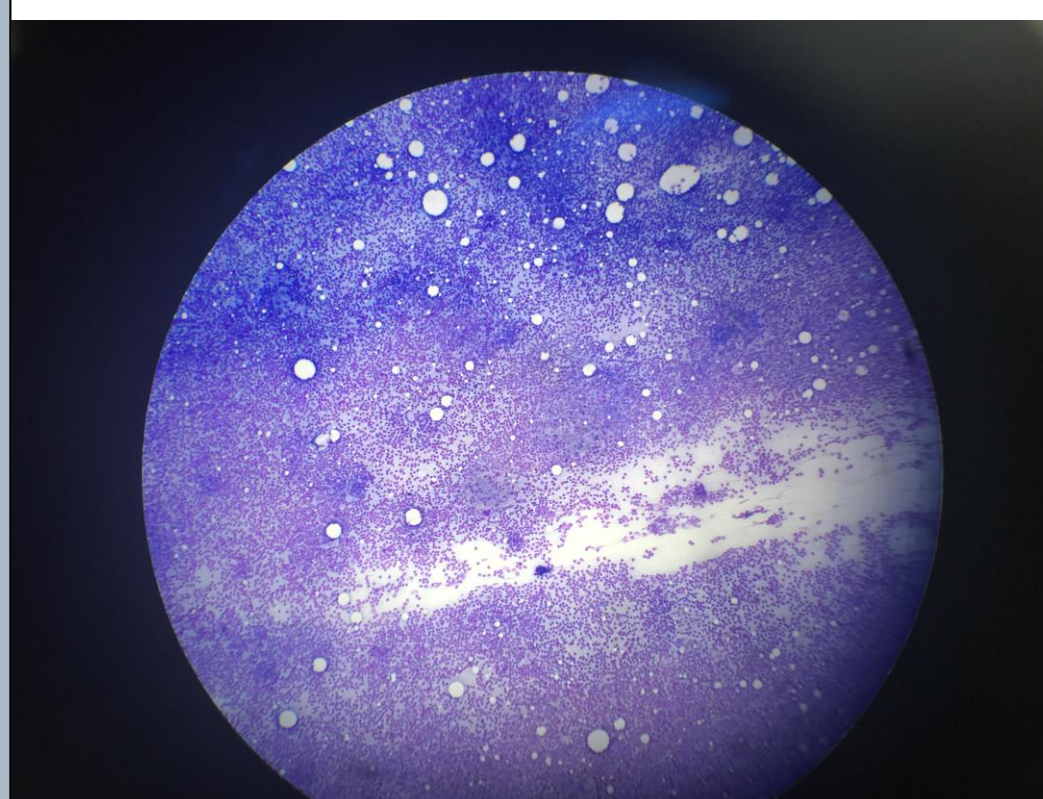


Fig. 1. Multiple Granulomas identified on fine needle aspirate. (Diff Quik stain, original magnification, x100)

Case Report Cont.

- Laboratory studies revealed normal CBC, CMP, and TSH.
- Aspiration biopsy of the right occipital lymph node demonstrated granulomas and aggregates of histiocytes compatible with reactive hyperplasia. No evidence of malignancy found. Findings were suggestive of toxoplasmosis
- Follow up *T. gondii* serological testing results were consistent with a recent infection.
- Toxoplasma gondii* Ab IgM: 104 AU/ML (reference range 0.0-7.9)
- Toxoplasma gondii* Ab IgG: >400 AU/ML (reference range 0.0-7.1)
- Patient was referred to Infectious Disease and supportive therapy was recommended.
- A three month follow-up showed improvement in symptoms.

Media

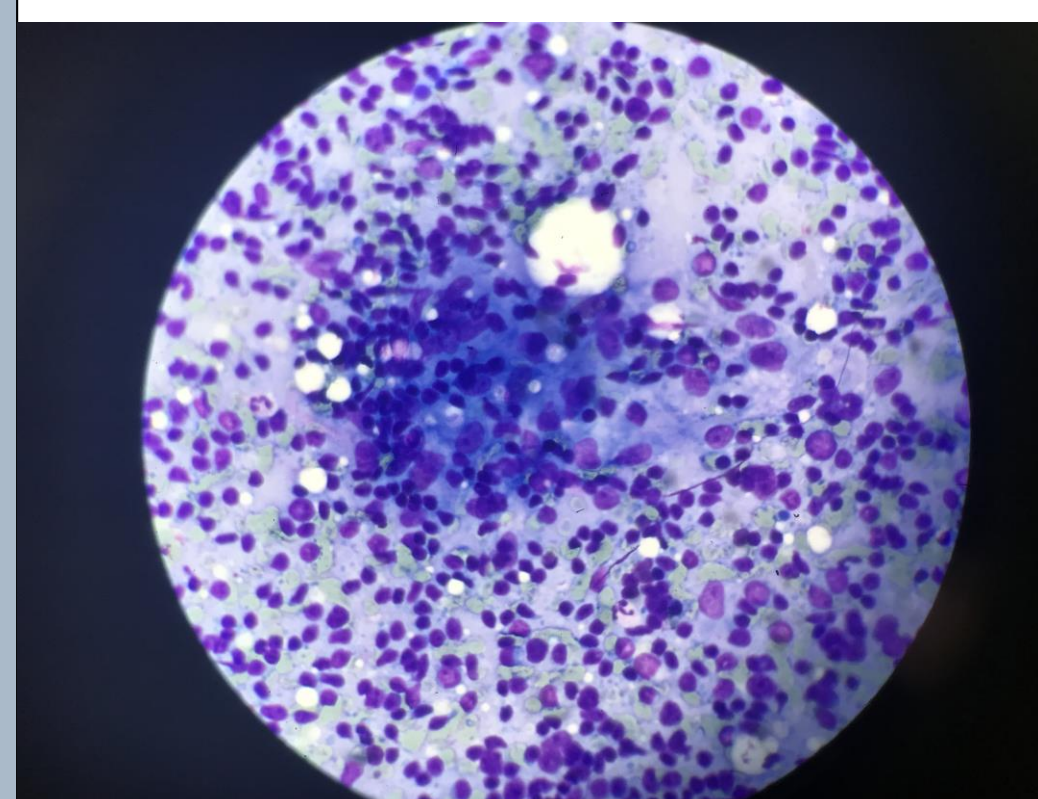


Fig. 2. Granuloma consisting of loose aggregates of epithelioid histiocytes in background of lymphoid cells. (Diff Quik stain, original magnification x400).

Conclusion

- Acute infection is typically self-limited. Lymphadenopathy, with a solitary lymph node in the head and neck regions, being the most common presentation in immunocompetent patients.
- More severe manifestations include: pneumonitis, myocarditis, pericarditis, polymyositis, hepatitis, acute respiratory distress syndrome, encephalitis, or chorioretinitis.
- A 2-4 week pyrimethamine based antibiotic course is recommended for patients with acute systemic infections related to *T. gondii*.
- Whereas in patients with *T. gondii* related chorioretinitis, pyrimethamine with sulfadiazine and leucovorin is preferred.
- Adjuvant glucocorticoids should be included for patients with significant vitreous inflammation and retinal vasculitis. The former regimens are typically preferred to TMP-SMX, which can also be used.
- Education and appropriate protective measures for high-risk individuals, such as servicemen stationed overseas, may be beneficial.
- Preventive measures include: proper storage and adequate cooking of raw meats, using hot water and soap to clean cooking surfaces, avoiding unpasteurized non-bovine milk (e.g goat's milk), as well as wearing gloves and adequate handwashing when handling soil or areas where non-domesticated cat litter may be a contaminate.
- In conclusion, most cases of acute reactive toxoplasmosis are self-limited

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